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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/581,317 | 08/08/2000 | VLADIMIR POTAPOV | 31583-160474 | 7014 |

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EXAMINER

MEDLEY, PETER M

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 03/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/581,317

Applicant(s)

POTAPOV ET AL.

Examiner

Peter M Medley

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 17-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al in view of Forster.

With respect to claims 17 and 28, Inoue et al discloses an ultrasonic transducer comprising a membrane **7**, holding means, a piezoelectric disc **2**, a first substance **34**, and a second substance **5** in **fig. 6**. The second substance is an epoxy as indicated in the last full paragraph of column 3.

The reference does not disclose the what percentage diameter the piezoelectric disc is compared with the membrane or that the first substance is foamed.

The court has stated that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The Examiner takes Official Notice that the operating characteristics of the transducer are affected by the relationship of the diameters. It would have been obvious to one of ordinary skill in the art to use a diameter of the piezoelectric disc to be between 60% and 85% for the purpose of optimizing the characteristics of the transducer (i.e. changing lobe size and direction). Forster discloses using a polyurethane foam

covering for the purpose of improving decay attenuation. It would have been obvious to one of ordinary skill in the art to use foam for the purpose of improving decay attenuation.

With respect to claim 18, the reference discloses the holding means to be a metal, but not Al or an Al alloy.

With respect to claim 19, the reference discloses in **fig. 6** that holding means is one piece with the membrane **7** and form a pot shaped structure.

The court has found that the selection of a known material based on its suitability for its intended use is obvious. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). The Examiner takes Official Notice that the properties of Al and Al alloys are well known. It would have been obvious to one of ordinary skill in the art to use Al or an Al alloy for the holding means for the purpose of utilizing its well known properties (i.e. thermal, electrical properties, and corrosive resistance).

With respect to claims 20 and 21, the reference does not disclose the same dimensions.

The court has stated that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The Examiner takes Official Notice that the dimension of the transducer affects the output of the transducer. It would have been obvious to one of ordinary skill in the art to use the same dimension for the purpose of getting a certain output.

With respect to claim 22, the reference discloses in lines 28-31 of column 3 that the disc 2 is glued to the membrane 7.

With respect to claims 23-26, the reference does not disclose the specifics of the piezoelectric disc or the foam.

The court has found that the selection of a known material based on its suitability for its intended use is obvious. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). The Examiner takes Official Notice that the piezoceramic material and foams are well known in the art. It would have been obvious to one of ordinary skill in the art to use a specific piezoceramic material and foam for the purpose of providing specific characteristics for the transducer.

With respect to claim 27, the reference discloses in **fig. 6** a first electrode 10 and a thin wire 24 soldered to a second electrode 11.

With respect to claim 29, the method claims are necessitated by the product claims.

Response to Arguments

3. Applicant's arguments filed 18 January 2002 have been fully considered but they are not persuasive.

With respect to Inoue et al, using the broadest reasonable definitions of diaphragm and holding means, the element 5 in Inoue et al and designated as a diaphragm satisfies both of these limitations of the present invention.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter M Medley whose telephone number is 703-305-0494. The examiner can normally be reached on Monday-Friday 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3432 for After Final communications.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PM
February 25, 2002



NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800